AMENDMENTS TO THE SPECIFICATION:

Please replace paragraph [0004] with the following amended paragraph:

[0004] In some cases, it may be beneficial to detect, identify, and count microparticles. For example, in cases in which microparticles are synthetically fabricated, it may be advantageous to identify and count the microparticles during their production for quality assurance purposes. In other applications, such as wastewater processing and/or bulk pumping of industrial chemicals, microparticles may be indicative of contamination. As such, in some embodiments, it may be advantageous to detect and count microparticles to determine the concentration of contaminants within the systems. In some cases, dilution of dyes or taggants may be alternatively used to measure contamination volumes, however, such techniques typically involve ~~a~~ taking a sample to a central laboratory for detailed analyses. In addition, some dyes have adverse environmental problems and/or may be very difficult to assay once spilled or evaporated into the air.

Please replace paragraph [0007] with the following amended paragraph:

[0007] The problems outlined above may be in large part addressed by systems and methods for analyzing microparticles within flowing fluids. In particular, a device for analyzing microparticles is provided which includes a chamber comprising an inlet and an outlet for respectively introducing and dispensing a flowing fluid comprising microparticles. Such a chamber may be adapted to induce a laminar flow of the fluid such that the microparticles flow abreast with the chamber walls. For example, in some embodiments, the chamber may be configured with a width between approximately 10 microns and approximately 1200 microns. In addition, the device may include one or more light sources adapted to provide incident light through the chamber and a photometer configured to measure the intensity of light transmitted through individual microparticles. In this manner, the chamber may include two opposing view ports through which the incident light may be transmitted. In cases in which the device includes more than one light source, the device may be configured to provide incident light through the chamber at different wavelengths. In addition to the light sources and

photometer, the device may include an imaging system configured to acquire images of the flowing fluid within the chamber. In some cases, the device may include a moveable mirror system configured to reflect the light transmitted through the chamber to the imaging system. In addition or alternatively, the imaging system may include a magnification lens configured to enlarge the appearance of individual microparticles within the flowing fluid to be equal to or slightly larger than a pixel size of the images produced by the imaging system. In any case, the device may be a component of a larger system, such as a microencapsulation apparatus, or may be an independent unit.

Please replace paragraph [0010] with the following amended paragraph:

[0010] There may be several advantages to using the microparticle analytical system and method provided herein. For example, the microparticle analytical system offers a manner in which to accurately identify, characterize, track and count microparticles within a flowing fluid. Microparticle size, shape, content and number can be used for feedback control purposes. For instance, the microparticle information obtained from the system and method described herein may be used to optimize the production of microcapsules from a microencapsulation system. In some embodiments, the microparticle analytical device may be portable and, therefore, may be used in a variety of applications, including those in remote regions without power sources. In other embodiments, the analysis system may be included within a microencapsulation system such that the production and processing of microcapsules may be continuous. Such a continuous process averts the disadvantages of down-time and increased production costs associated with batch processing.

Please replace paragraph [0014] with the following amended paragraph:

[0014] In general, system 80 may be configured to analyze discrete samples of a stream or an entirety of the stream. In either case, system 80 may be configured to make real-time measurements of microparticles flowing in a pipeline or other flowing liquid system. Consequently, chamber 82 of system 80 may, in some embodiments, be a segment of a

chamber or a pipe. In other embodiments, however, chamber 82 may be a distinct component for sampling a fluid from a different chamber. Although Fig. 4 illustrates chamber 82 arranged to induce a horizontal flow of fluid, chamber 82 may alternatively be configured to induce a vertical flow of fluid or any flow other than a horizontal flow. In addition, the system described in reference to Fig. 4 may, in some embodiments, be a portable unit. More specifically, system 80 may be configured such that it can be moved to different locations. In some cases, system 80 may be configured to operate upon battery power. Consequently, in such an embodiment, system 80 may be used in areas in which alternating current (AC) power is not available. Furthermore, system 80 may, in some embodiments, include means 81 configured to flush out chamber 82 such that residual particles may be removed and the chamber can be cleaned. In general, means 81 may be coupled to chamber 82 in a variety of manners. To simplify the illustration of system 80, however, means 81 is shown coupled to system 80 by a dotted line to show a general connection to chamber 82.

Please replace paragraph [0015] with the following amended paragraph:

[0015] As shown in Fig. 4, system 80 may include chamber 82 comprising inlet 84 and outlet 86 with which to respectively introduce and dispense a flowing fluid comprising microparticles. In general, chamber 82 may be configured such that the fluid carries each suspended microparticle abreast with the chamber walls such that each microparticle within the fluid may be detected and tracked individually. In this manner, chamber 82 may be configured to induce a parabolic flow from inlet ~~82~~ 84 to outlet ~~84~~ 86. In other words, chamber 82 may be configured to induce a drag force within the chamber such that fluid near the center flows at a faster rate than the fluid along the sidewalls of the chamber. In this manner, microparticles within the fluid may change their positions relative to each other as they pass through chamber 82. Consequently, all microparticles within chamber 82 may be accounted for when sequential images of the fluid are taken. The process of obtaining and analyzing the sequential images to identify, track and count microparticles within a fluid is described in more detail below in reference to detector 96.